



## Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

# BOTANICAL GAZETTE

THE  
BOTANICAL GAZETTE

---

EDITOR  
JOHN MERLE COULTER

---

VOLUME LIV  
JULY-DECEMBER, 1912

---

WITH THIRTY-SIX PLATES, ONE HUNDRED AND ELEVEN FIGURES,  
AND TWO PORTRAITS



THE UNIVERSITY OF CHICAGO PRESS  
CHICAGO, ILLINOIS

Published  
July, August, September, October, November, December, 1912

Composed and Printed By  
The University of Chicago Press  
Chicago, Illinois, U.S.A.

# TABLE OF CONTENTS

	PAGE
The development of the vascular structure of <i>Dianthera americana</i> (with plates I-IV) -	W. Ralph Jones 1
The toxic action of organic compounds as modified by fertilizer salts (with five figures)	Oswald Schreiner and J. J. Skinner 31
The effect of external conditions upon the after-ripening of the seeds of <i>Crataegus mollis</i> . Contributions from the Hull Botanical Laboratory	157 - - - - Wilmer E. Davis and R. Catlin Rose 49
The structure of the stomata of certain Cretaceous conifers (with plates V and VI) - - -	W. P. Thompson 63
Spermatogenesis in <i>Equisetum</i> . Contributions from the Hull Botanical Laboratory	158 (with plates VII and VIII) - - - - Lester W. Sharp 89
The primary color-factors of <i>Lychnis</i> and color-inhibitors of <i>Papaver Rhoeas</i> - -	George Harrison Shull 120
Contributions from the Rocky Mountain Herbarium XI (with two figures) - - -	Aven Nelson 136
Beneficial effect of creatinine and creatine on growth (with one figure) - - - -	J. J. Skinner 152
The life history of <i>Aneura pinguis</i> . Contributions from the Hull Botanical Laboratory	159 (with plates IX-XII) - - - - Grace L. Clapp 177
Plant geography of North Central New Mexico. Contributions from the Hull Botanical Laboratory	160 (with seven figures) - - - - J. R. Watson 194
The perfect stage of <i>Actinonema rosae</i> (with plate XIII) - - - - -	Frederick A. Wolf 218
Undescribed plants from Guatemala and other Central American Republics. XXXV - -	John Donnell Smith 235
Influence of phosphate on the toxic action of coumarin - - - - -	J. J. Skinner 245
Comparative anatomy of dune plants. Contributions from the Hull Botanical Laboratory	161 (with thirty-five figures) - - - - Anna M. Starr 265
<i>Parnassia</i> and some allied genera (with plates XIV-XVII) - - - - -	Lula Pace 306
Development of the microsporangia and microspores of <i>Abutilon Theophrasti</i> (with twelve figures) - - - - -	V. Lantis 330

	PAGE
The development of <i>Blastocladia strangulata</i> , n. sp. (with plates XVIII-XX) - - - -	J. T. Barrett 353
The orchid embryo sac (with plates XXI-XXIII)	Lester W. Sharp 372
Growth studies in forest trees. 1. <i>Pinus rigida</i> Mill. (with plates XXIV and XXV) - -	Harry P. Brown 386
Contributions from the Rocky Mountain Her- barium. XII - - - -	Aven Nelson 404
Two species of <i>Bowenia</i> . Contributions from the Hull Botanical Laboratory 162 (with four figures) - - - -	Charles J. Chamberlain 419
Life history of <i>Cutleria</i> . Contributions from the Hull Botanical Laboratory 163 (with fifteen figures and plates XXVI-XXXV) - - -	Shigéo Yamanouchi 441
The nature of the absorption and tolerance of plants in bogs - - - -	Alfred Dachnowski 503
Ingrowing sprouts of <i>Solanum tuberosum</i> (with plate XXXVI and six figures) - - -	C. Stuart Gager 515
The abortive spike of <i>Botrychium</i> . Contributions from the Hull Botanical Laboratory 164 (with twenty-one figures) - - - -	O. O. Stoland 525
Plants which require sodium (with two figures) -	W. J. V. Osterhout 532
BRIEFER ARTICLES—	
Eduard Strasburger (with two portraits)	Charles. J Chamberlain 68
A note on the generations of <i>Polysiphonia</i> (with one figure) - -	George B. Rigg and Annie D. Dalgity 164
Absorption of barium chloride by <i>Aragallus</i> <i>Lamberti</i> - - - -	C. Dwight Marsh 250
Artificial production of aleurone grains (with one figure) - - - -	W. P. Thompson 336
A new species of <i>Andropogon</i> - - -	A. S. Hitchcock 424
Evaporation and the stratification of vegeta- tion (with one figure) - - - -	George D. Fuller 424
The perfect stage of the <i>Ascochyta</i> on the hairy vetch - - - -	George F. Atkinson 537
<i>Gautieria</i> in the Eastern United States - -	George F. Atkinson 538
CURRENT LITERATURE - - - -	73, 166, 253, 339, 427, 540
For titles of book reviews see index under author's name and reviews	
Papers noticed in "Notes for Students" are indexed under author's name and subjects	

#### DATES OF PUBLICATION

No. 1, July 15; No. 2, August 16; No. 3, September 21; No. 4, October 15; No. 5, November 13; No. 6, December 16.

## ERRATA

- P. 1, to title add index<sup>1</sup>, and append footnote Contribution from the Botanical Laboratory of the Johns Hopkins University, No. 24.
- P. 51, line 3 from bottom, for than read then.
- P. 57, line 14 from top, for carpel read carpels.
- P. 79, footnote 2, for VOLGER read VOGLER.
- P. 88, footnote 34, for COMBES, RAOUL read COMBES, RAOUL.
- P. 127, change lines 14-20 to read as follows: be 1 white-flowered to 1 purple-flowered, or in this particular family 13 white-flowered to 13 purple-flowered, to which expectation the observed result is not in sufficiently close agreement even considering the small number of individuals. If the *rubrum* parent were heterozygous in respect to both the primary factors for color, *C* and *R*, it being assumed that the *album* parent lacked both these factors, a 3:1 ratio would result.
- P. 127, line 28, omit also.
- P. 148, line 19, for CASTILLEJA VISCIA read CASTILLEJA VISCIDA.
- P. 164, line 19, omit on before *Griffithsia* and *Delesseria*.
- P. 164, line 21, insert regularly before borne.
- P. 165, legend of fig. 1, for a *Polysiphonia* (?) read the plant referred to in this note.
- P. 191, last line, for Eracheinungen read Erscheinungen.
- P. 208, line 8, for practically read partially.
- P. 235, line 8 from bottom, omit hyphen between subtus and fusco.
- P. 252, line 11, for 37.095 read 37.95.
- P. 269, line 13, for into read in to.
- P. 274, line 11, for slight read slightly succulent.
- P. 277, line 1 of *Celtis* table, for (87-72) read (27-72).
- P. 281, line 1 of *Ostrya* table, for (66-95) read (66-93).
- P. 297, line 11 from bottom, after reported insert (3).
- P. 393, line 2, for began read begins.
- P. 405 for **Calochortus umbellatus** read **Calochortus euumbellatus**; line 10 from bottom, for *C. umbellatus* read *C. euumbellatus*.
- P. 419, line 5, for in the Tropic read on the Tropic.
- P. 428, footnote 2, for 1912 read 1911.